Pediatric Assessment

High Stress Situation

- Child
  - In pain
  - Frightened
  - Guilty

High Stress Situation

- Parent
  - Frightened
  - Guilty
  - Exhausted

High Stress Situation

- Paramedic
  - Frightened
  - May over-empathize

Basic Points

- Oxygenation, ventilation adequate to preserve life, CNS function?
- Cardiac output sufficient to sustain life, CNS function?
- Oxygenation, ventilation, cardiac output likely to deteriorate before reaching hospital?
- C-spine protected?
- Major fractures immobilized?

Basic Points

- If invasive procedure considered, do benefits outweigh risks?
- If parent is not accompanying child, is history adequate?
- Transport expeditiously
- Reassess, Reassess, Reassess

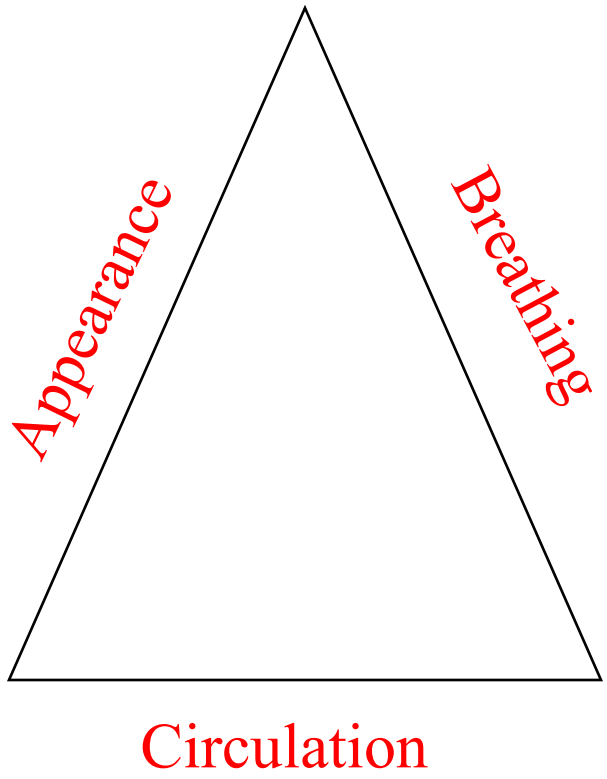
Patient Assessment

- Priorities are similar to adult
- Greater emphasis on airway, breathing

Patient Assessment

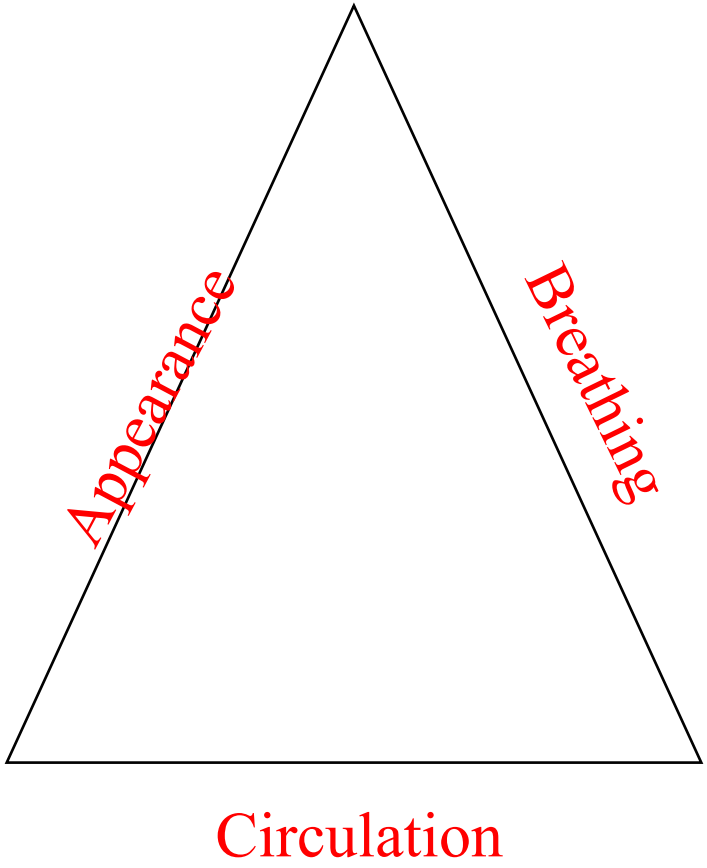
- Limit to essentials
- Look before you touch

Pediatric Assessment Triangle: First Impression



- Appearance - mental status, body position, tone
- Breathing - visible movement, effort
- Circulation - color

Pediatric Assessment Triangle
Initial Assessment



- Appearance - AVPU
- Breathing - airway open, effort, sounds, rate, central color
- Circulation - pulse rate/strength, skin color/temp, cap refill, BP (↓ use at early ages)

Initial Assessment

- Categorize as:
  - Stable
  - Potential Respiratory Failure or Shock
  - Definite Respiratory Failure or Shock
  - Cardiopulmonary Failure

Initial Assessment

- Identify, correct life threats
- If not correctable,
  - Support oxygenation, ventilation, perfusion
  - Transport

Vital Signs

- Essential elements
  - Proper equipment
  - Knowledge of norms
- Carry chart of norms for reference

Weight

- Why is weight a pedi vital sign?
- (Age[yrs] x 2) + 8

Heart Rate

- Apical auscultation
- Peripheral palpation
- Tachycardia may result from:
  - Fear
  - Pain
  - Fever

Heart Rate

- Tachycardia + Quiet, non-febrile patient = Decrease in cardiac output
  - Heart rate rises long before BP falls!
- Bradycardia + Sick child = Premorbid state
  - Child < 60
  - Infant <80

Blood Pressure

- Proper cuff size
  - Width = 2/3 length of upper arm
  - Bladder encircles arm without overlap

Blood Pressure

- Children >1 year old
  - Systolic BP = (Age x 2) + 80

Blood Pressure

- Hypotension = Late sign of shock
- Evaluate perfusion using:
  - Level of consciousness
  - Pulse rate
  - Skin color, temperature
  - Capillary refill
- Do not delay transport to get BP

Respirations

- Before touching
- For one full minute
- Approximate upper limit of normal = (40 - Age[yrs])

Respirations

- > 60/min = Danger!!
- Slow = Danger, impending arrest
- Rapid, unlabored
  - Metabolic acidosis
  - Shock

Capillary Refill

- Check base of thumb, heel
- Normal ≤ 2 seconds
- Increase suggests poor perfusion
- Increases long before BP begins to fall
- Cold exposure may falsely elevate

Temperature

- Cold = Pediatric Patient's Enemy!!!
  - Large surface:volume ratio
  - Rapid heat loss
- Normal = 37^0C (98.6^0F)
- Do <u>not</u> delay transport to obtain

Temperature

- Measurement: Axillary
  - Hold in skin fold 2 to 3 minutes
  - Normal = 97.6^0F
  - Depends on peripheral vasoconstriction/dilation

Temperature

- Measurement: Oral
  - Glass thermometers not advised
  - May be attempted with school-aged children

Temperature

- Measurement: Rectal
  - Lubricated thermometer
  - 4cm in rectum, 1 - 2 minutes
  - Do not attempt if child
    - Is < 2 months old
    - Is struggling

Physical Exam

- Do not delay transport for full secondary survey
- Children under school age: go toe to head
- Examine areas of greatest interest first

Physical Exam

After exposing during primary survey, cover child to avoid hypothermia!

Physical Exam: Special Points

- Head
  - Anterior fontanel
    - Remains open until 12 to 18 months
    - Sinks in volume depletion
    - Bulges with increased ICP

Physical Exam: Special Points

- Chest
  - Transmitted breath sounds
  - Listen over mid-axillary lines

Physical Exam: Special Points

- Neurologic
  - Eye contact
  - Recognition of parents
  - Silence is NOT golden!

History

- Best source depends on child's age
- Do not underestimate child's ability as historian
  - Imagination may interfere with facts
  - Parents may have to fill gaps, correct time frames

History

- Brief, relevant
  - Allergies
  - Medications
  - Past medical history
  - Last oral intake
  - Events leading to call
  - Specifics of present illness

History

- On scene observations important
- Do not judge/accuse parent
- Do not delay transport

General Assessment Concepts

- Children not little adults
- Do not forget parents
- Do not forget to talk to child
- Avoid separating children, parents unless parent out of control

General Assessment Concepts

- Children understand more than they express
- Watch non-verbal messages
- Get down on child's level
- Develop, maintain eye contact
- Tell child your name
- Show respect
- Be honest

General Assessment Concepts

- Kids do not like:
  - Noise
  - Cold places
  - Strange equipment

General Assessment Concepts

- In emergency do not waste time in interest of rapport
- Do not underestimate child's ability to hurt you

Developmental Stages

Neonates

- Gestational age affects early development
- Normal reflexive behavior present
  - Sucking
  - Grasp
  - Startle response

Neonates

- Mother, father can usually quiet
- Knows parents, but others OK
- Keep warm
- Use pacifier, finger
- Have child lie on mother’s lap

Neonates

- Common Problems
  - Respiratory distress
  - Vomiting, diarrhea
  - Volume depletion
  - Jaundice
  - Become hypothermic easily

Young Infants (1 - 6 months)

- Follows movement of others
- Recognizes faces, smiles
- Muscular control develops:
  - Head to tail
  - Center to periphery
- Examine toe to head

Young Infants (1 - 6 months)

- Parents important
- Usually will accept strangers
- Have lie on mom’s lap
- Keep warm
- Use pacifier or bottle

Young Infants (1 - 6 months)

- Common problems
  - Vomiting, diarrhea
  - Volume depletion
  - Meningitis
  - SIDS
  - Child abuse

Older Infants (6 - 12 months)

- May stand, walk with help
- Active, alert
- Explores world with mouth

Older Infants (6 - 12 months)

- Intense stranger anxiety
- Fear of lying on back
- Assure parent's presence
- Examine in parent's arms if possible
- Examine toe to head

Older Infants (6 - 12 months)

- Common problems
  - Febrile seizures
  - Vomiting, diarrhea
  - Volume depletion
  - Croup
  - Bronchiolitis

- **Meningitis**
- **Foreign bodies**
- **Ingestions**
- **Child abuse**

Toddlers (1 - 3 years)

- Excellent gross motor development
- Up, on, under everything
- Runs, walks, always moving
- Actively explores environment
- Receptive language

Toddlers (1 - 3 years)

- Dislike strange people, situations
- Strong assertiveness
- Temper tantrums

Toddlers (1 - 3 years)

- Examine on parent's lap, if possible
- Talk to, "examine" parent first
- Examine toe to head
- Logic will not work
- Set rules, explain what will happen, restrain, get it done

Toddlers (1 - 3 years)

- Common problems
  - Trauma
  - Febrile seizures
  - Ingestions
  - Foreign bodies

- **Meningitis**
- **Croup**
- **Child abuse**

Preschoolers (3 - 5 years)

- Increasing gross, fine motor development
- Increasing receptive, expressive language skills

Preschoolers (3 - 5 years)

- Totally subjective world view
- Do not separate fantasy, reality
- Think “magically”
- Intense fear of pain, disfigurement, blood loss

Preschoolers (3 - 5 years)

- Take history from child first
- Cover wounds quickly
- Assure covered areas are still there
- Let them help
- Be truthful
- Examine toe to head

Preschoolers (3 - 5 years)

- Common problems
  - Trauma
  - Drowning
  - Asthma
  - Croup
  - Meningitis
  - **Febrile seizures**
  - **Ingestions**
  - **Foreign bodies**
  - **Child abuse**

School Age (6 - 12 years)

- Able to use concepts, abstractions
- Master environment through information
- Able to make compromises, think objectively

School Age (6 - 12 years)

- Give child responsibility for history
- Explain what is happening
- Be honest

School Age (6 - 12 years)

- Common problems
  - Trauma
  - Drowning
  - Child abuse
  - Asthma

Adolescents

- Wide variation in development
- Seeking self-determination
- Peer group acceptance can be critical
- Very acute body image
- Fragile self-esteem

Adolescents

- Reassure, but talk to them like adult
- Respect need for modesty
- Focus on patient, not parent
- Tell truth
- Honor commitments

Adolescents

- Common problems
  - Trauma
  - Asthma
  - Drugs/alcohol
  - Suicidal gestures
  - Sexual abuse
  - Pregnancy